

on the Character and Prospects of the Copper Region of Gibara, and a Sketch of the Geology of the North-east part of the Island of Cuba," and "Notice of Fossil Arborescent Ferns of the Family of Sigillaria and other Coal Plants exhibited in the Roof and Floor of a Coal Seam in Dauphin County, Penn."—and the communication by Prof. Booth and Mr. Boyé, entitled, "On the Conversion of Benzoic into Hippuric Acid,"—all of which were read at the centenary meeting,—severally reported in favour of the publication of the communications referred to them; and the publication was ordered accordingly.

Dr. Bache announced the decease of Dr. Richard Harlan, a member of the Society, who died at New Orleans on the 30th of September last.

Dr. Mease laid before the Society the Proceedings of the Medico-Chirurgical Society of Louisiana, on the occasion of Dr. Harlan's death; and they were read.

Mr. Walker gave a succinct account of the condition of the questions in regard to the orbit of the comet of February, 1843, as left by observations.

He also read an extract from the *Astronomische Nachrichten* of August 12, in which Mr. Clausen, an assistant at the Dorpat observatory, under date of 21st April, 1843, affirms the identity of the comet of February with that of 1668 and 1689; this conclusion coinciding with that announced to the Society by Messrs. Walker and Kendall in May last, and published in the 27th No. of the Proceedings. Mr. Clausen asserts the probable return of the comet in 1865.

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*Stated Meeting, November 3.*

Present, thirty-three members.

Dr. PATTERSON, Vice-President, in the Chair.

Professor Wylie, of Indiana University, was introduced as a visitor.

Letters were received and read:—

From the Secretary of the Asiatic Society of Bengal, dated

Calcutta, March 8, 1843, and the Secretary of the Royal Society of Sciences of Göttingen, dated Aug. 17, 1843, severally acknowledging the receipt of the Transactions and Proceedings of this Society: and—

From Francis Hopkinson, Esq., dated Nov. 2, 1843, presenting to the Society an engraving from the latest portrait of his father, Vice President Hopkinson, by Sully.

The following donations were announced:—

FOR THE LIBRARY.

Flora Batava, ou Figures et Descriptions de Plantes Beligiques. Livraison, 129. 4to.—*From His Majesty the King of the Netherlands.*

Archives du Muséum d'Histoire Naturelle, Publiées par les Professeurs, Administrateurs de cette Établissement. Tome II. Livraison 4e. Tome III. Livraison 3e. 4to.—*From the Professors.*

Bulletin de la Société de Géographie. Deuxième Série. Tome XIX. Paris, 1843. 8vo.—*From the Society.*

Proceedings of the Boston Society of Natural History. Taken from the Society's Records. From January 6, 1841, to the 21st of June, 1843. 8vo.—*From the Society.*

Constitution and By-Laws of the Northern Academy of Arts and Sciences; and Second Annual Report of the Curators. Presented July 25, 1843. 8vo.—*From the Academy.*

A Catalogue of the Officers and Students of Dartmouth College. 1843-4. 8vo.—*From the College.*

Tijdschrift voor Natuurlijke Geschiedenis en Physiologie. Tiende Deel. 2e. 3e. Stuk. Leiden, 1843. 8vo.—*From the Editors.*

ADDITION TO THE LIBRARY BY PURCHASE.

Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences. Tome XVI. Nos. 1 to 25, inclusive. Tome XVII. Nos. 1 to 7, inclusive. Tables du Tome XV. Paris, 1843. 4to.

FOR THE CABINET.

An Engraved Portrait of the late Judge Hopkinson, from a Painting by Sully. Engraved by Sartain.—*From F. Hopkinson, Esq.*

The Committee to whom was referred Dr. Morton's communication, entitled, "An Inquiry into the Form of the Head and other Ethnographic Characters of the Ancient Egyptians," reported in favour of its publication in the Transactions;— which was ordered accordingly.

The communications presented at the centenary meeting by Mr. Breck, Mr. Tyson, Dr. Coates, and Mr. Gilpin, were referred to the Historical and Literary Committee, with power to take order in reference to the publication of them.

Professor Henry made an oral communication in regard to the application of Melloni's thermo-electric apparatus to meteorological purposes, and explained a modification, to which he had been led in the course of his researches, of the parts connected with the pile. He had found the vapours near the horizon powerful reflectors of heat; but in the case of a distant thunder storm, he had found that the cloud was colder than the adjacent blue space.

Referring to the theory of the discharge of the Leyden jar, which he had submitted to the Society some time since, Prof. Henry examined some apparent objections to it, resulting from the researches of Matteucci. The effect produced on the galvanometer by the discharge of a battery, is due to the retardation of the lesser waves of electricity, a fact which indicates the cause of Matteucci's results, when a card was pierced by the currents induced in a neighbouring wire conductor forming an open circuit.

Professor Henry described several experiments on the direct and return stroke, showing that equilibrium was restored by the same succession of oscillations; large and small needles placed in spirals forming part of an electrical circuit, being magnetized in different directions. The disturbance of the electrical plenum by a discharge of electricity was referred to, as explanatory of the induction which takes place; and the subject was applied to the explanation of various phenomena; among others, the light appearing in well authenticated cases about persons and objects in the neighbourhood of a discharge of lightning in its direct passage; and suggestions were made as to the most effectual mode of protecting powder houses, &c., from the effects of lightning.

Professor Henry examined in the same connexion, whether currents of ordinary electricity pass actually at the surface, or, like galvanic electricity, through the mass of the conductor; and he concluded that the law of conduction developed by Ohne cannot apply to the case of surface passages, as these are indicative of ordinary electricity.

Mr. Walker submitted a communication on behalf of Dr. Locke, of Cincinnati, in which he stated that he had calculated his magnetic observations, and that he was led to infer that the point of greatest magnetic intensity in North America is to the N. W. of Lake Superior, near its extremity, and not near Hudson's Bay, as supposed by Col. Sabine.

Prof. Bache remarked, that Lieut. Lefroy is now engaged in the magnetic survey of British North America, and that his results, in conjunction with those of Dr. Locke and others, would definitively settle this contested point. Prof. B. also read an extract from a letter of Col. Sabine, mentioning that he had received the term-day observations of Lieut. Lefroy at Lake Winnipeg, and that an excellent northern station for the term-days would be had at Lieut. Lefroy's winter quarters.

Prof. Bache added, that the extra term-days of July had been kept, and the daily observations made on the first ten days, at the Magnetic Observatory of the Girard College.

A communication of Prof. Henry, in continuation of his researches on electro-dynamic induction, was referred to a Committee, consisting of Dr. Patterson, Prof. Bache, and Mr. Lukens.

Dr. Ludlow, from the Committee on the report of the Society's scientific proceedings during the past century, presented a request that the Committee should be discharged from further action under the resolution of the Society: and thereupon, on his motion, the Committee was discharged.